

## ACTIVITIES

## Southeast Asia Mosquito Project:

The Collection at USNM/SEAMP.<sup>1</sup>

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Botha de Meillon (1969) wrote on the Southeast Asia Mosquito Project giving the history of the Project, geographical area involved, specific aims and other information about SEAMP. Following here are notes about the mosquito collection that SEAMP is working with.

Number of specimens at present at the Project.

There was probably at least 85,000 adult specimens and perhaps a similar number of immature stages on slides (present day rough estimation) of USNM Southeast Asian mosquitoes at the start of the Project. Since then over 139,000 pinned adults and over 196,000 mounted immature stages have been received at SEAMP, many of these on loan from various institutions in the U. S. and overseas. The bulk of these are from the Philippines and Thailand, with material from West Malaysia now accumulating in substantial numbers.

In addition to the above numbers, unmounted adults and immatures have been received and mounted here by SEAMP staff, amounting to at least 10,000 specimens. Also prepared by SEAMP staff are over 3,500 slides of male terminalia.

History of the collection.

The Thailand material primarily consists of the D. C. and E. B. Thurman collections of the early 1950's and of the material resulting from the work of the SEATO medical research laboratory in Bangkok since its beginning in 1963. Large numbers of reared adults and slide preparations of associated larval and pupal skins and of whole larvae have been received from the SEATO laboratory since its work commenced.

Of the Philippine material the W. V. King collections of the early 30's, the collections of U. S. Army personnel in the 20's and of U. S. Army and Navy personnel in the 1944-45 era constitute a very

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large number of adult and immature specimens. Of the latter the Rozeboom, Knight and Laffoon collection and the collections of H. R. Roberts and E. S. Ross comprise a thorough and extensive survey of the areas they covered. Large collections have more recently been received from Philippine National Museum workers and from E. L. Peyton and Y-M. Huang of SEAMP. Most of this recent collecting has however been confined to Luzon island. F. E. Baisas has recently presented the USNM a large collection of his Philippine material.

Work by D. E. Hardy and V. I. Miles in 1943 and 1944 make up most of the Assam material; R. M. Bohart and R. L. Ingram made an extensive survey of mosquitoes on Okinawa in 1945, other collectors in that area at that time being C. L. Harnage, K. V. Krombein, A. J. Rogers and F. N. Young. Recent material has been received from the U. S. Army Medical Center on the Ryukyus where the western Ryukyu islands are being worked on. USNM specimens from the rest of Southeast Asia remain very few indeed. This has to a small extent been amended by loans from other institutions.

#### Borrowed collections.

At the start of the Project several large collections of mosquitoes were loaned to SEAMP by museums and universities of the United States. These loans consist essentially of Philippine material except for the University of Utah loan of Indonesian specimens. The Bishop Museum in Honolulu has loaned many specimens, mostly from the P. I. but some from less accessible countries of SEAMP interest. Unfortunately most of these specimens are trapped adults and are in rather poor condition. From overseas, the British Museum (Natural History) and the Instituut Voor Tropische Hygiene, Amsterdam, have loaned large numbers of older specimens, the latter institution being particularly important because of its extensive Indonesian collections, again though mostly of adults without preserved larval and pupal skins. A number of other institutions in various parts of the world have also loaned material to SEAMP.

#### Genera involved.

Twenty genera are represented in Southeast Asia, namely; Anopheles, Toxorhynchites, Tripteroides, Malaya, Topomyia, Ficalbia, Mansonia, Coquillettidia, Uranotaenia, Hodgesia, Zeugomyia, Orthopodomyia, Aedeomyia, Heizmannia, Udaya, Aedes, Ayurakitia, Armigeres, Culiseta, Culex.

#### Common species and subspecies.

A few species and subspecies have for long been collected and presented to the USNM and SEAMP in embarrassingly large numbers. These include the following:

Anopheles (Anopheles) barbirostris  
Anopheles (Cellia) indefinitus

Anopheles (Cellia) subpictus  
Anopheles (Cellia) vagus vagus  
Anopheles (Cellia) vagus limosus  
Tripteroides (Rachionotomyia) aranoides  
Orthopodomyia albipes  
Aedes (Stegomyia) aegypti  
Aedes (Stegomyia) albopictus  
Culex (Culiciomyia) nigropunctatus  
Culex (Culiciomyia) pallidothorax  
Culex (Culex) annulus  
Culex (Culex) bitaeniorhynchus  
Culex (Culex) fuscocephalus  
Culex (Culex) gelidus  
Culex (Culex) pipiens quinquefasciatus  
Culex (Culex) sitiens  
Culex (Culex) tritaeniorhynchus

Correctly identified specimens of these species from Thailand, West Malaysia and the Philippines are no longer needed, though they are still required from other countries.

Material required.

Mansonia and Coquillettidia are frequently collected as adults but not as larvae. Series of species of these genera with associated preserved larval and pupal skins from all of the S. E. Asia areas are needed.

Members of all genera from S. E. Asia countries other than Thailand, West Malaysia and the Philippines are very much needed. In all cases series of adults, preferably reared from isolated larvae are required, with the associated larval and pupal skins preserved.

Condition of material received.

Though much of the early Philippine material includes reared specimens with the larval and pupal skins mounted on slides, a chloral gum mountant was used which in some cases resulted in discoloured and sometimes shrunken preparations. Many of the early SEATO slides were similarly spoiled by use of a temporary mountant. Canada balsam should be used to ensure a good permanent slide preparation. Most adult material is sent to SEAMP mounted, gumming to a card point being the popular method which in most cases is well done and satisfactory. The general failing is in labelling and numbering systems. The large collections being undertaken by Dr. Shivaji Ramalingam and his team of the University of Malaya, Kuala Lumpur, always are a criterion of excellence. The quality of specimen preparation, the simple efficient numbering system, the labelling and quality of the label material is second to none.

Occasionally specimens arrive that have been damaged by pests. It should be remembered that at all stages of work with insect specimens care is necessary to keep them intact. Specimens should not be exposed to fast moving ants or roaches on the laboratory bench or unprotected from the slow moving Dermestid larvae in a storage box.

#### Disposal of material.

Apart from the massive accumulation of material collected to a great extent for SEAMP since it's commencement, a task ultimately to be done is to return the loans (much of which is now systematically incorporated among the total collection) to the many co-operating institutions. An excess of 23,000 adults and 10,000 slides is involved here. This is one of the major tasks yet to be accomplished by SEAMP.

#### Reference

De Meillon, B., 1969. The Southeast Asia Mosquito Project. Mosq. Syst. Newsletter 1(2):3-6.